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Amendments to the Claims:

1. (Currently Amended) A method of producing an assembly comprising at least one component, said method comprising:

mapping the ~~at least one~~ component and thereafter electronically displaying ~~at least one a~~ three-dimensional actual model representative of the ~~at least one~~ component based upon said mapping;

comparing the ~~at least one~~ actual model to an electronic display of ~~at least one a~~ three-dimensional authority model;

altering a position of at least one of the ~~at least one~~ actual model and the ~~at least one~~ authority model based upon said comparing such that the ~~at least one~~ authority model and the ~~at least one~~ actual model at least partially align;

performing a machine operation on the ~~at least one~~ component based upon the said altering the position of at least one of the ~~at least one~~ actual model and the ~~at least one~~ authority model; and

dynamically displaying the ~~at least one~~ actual model such that the ~~at least one~~ actual model is automatically and repeatedly updated as the position of at least one of the ~~at least one~~ actual model and the ~~at least one~~ authority model is altered and the machine operation is performed.

2. (Currently Amended) A method according to Claim 1 further comprising designing at least one electronic three-dimensional authority model of the ~~at least one~~ component before mapping the ~~at least one~~ component, wherein the ~~at least one~~ authority model is based upon at least one feature of the ~~at least one~~ component.

3. (Currently Amended) A method according to Claim 2, wherein said designing comprises designing ~~at least one an~~ authority model based upon at least one authority feature of the ~~at least one~~ component and at least one attributed tolerance, wherein said mapping comprises mapping at least one actual feature of the ~~at least one~~ component, and wherein said comparing comprises comparing the ~~at least one~~ actual model and the ~~at least one~~ authority model based

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upon the at least one authority feature and at least one attributed tolerance and the at least one actual feature.

4. (Currently Amended) A method according to Claim 1, wherein the ~~at least one~~ actual model comprises ~~at least one~~ actual model data set, wherein the ~~at least one~~ authority model comprises ~~at least one~~ authority model data set, and wherein said comparing comprises determining a best fit of the ~~at least one~~ actual model with the ~~at least one~~ authority model from the ~~at least one~~ actual model data set and the ~~at least one~~ authority model data set.

5. (Currently Amended) A method according to Claim 1, wherein said mapping comprises mapping the ~~at least one~~ component based upon a location and orientation of the ~~at least one~~ component relative to a flexible tool, wherein said comparing comprises comparing the ~~at least one~~ authority model and the ~~at least one~~ actual model based upon the location and orientation of the ~~at least one~~ component.

6. (Currently Amended) A method according to Claim 5, wherein comparing comprises comparing the ~~at least one~~ authority model and the ~~at least one~~ actual model further based upon a temperature of the ~~at least one~~ component and a temperature of a local environment of the ~~at least one~~ component.

7. (Currently Amended) A method according to Claim 1 further comprising fabricating the ~~at least one~~ component before mapping the ~~at least one~~ component.

8. (Currently Amended) A method according to Claim 7, wherein fabricating the ~~at least one~~ component comprises generating at least one numerical control program from at least one three-dimensional authority model and thereafter machining the ~~at least one~~ component based upon the at least one numerical control program.

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9. (Currently Amended) A method according to Claim 1, wherein said comparing further comprises automatically and repeatedly comparing the ~~at least one actual~~ model and the ~~at least one authority~~ model as the machine operation is performed.

10. (Currently Amended) A method according to Claim 1 further comprising repeatedly transferring data representative of the ~~at least one actual~~ model while dynamically displaying the ~~at least one actual~~ model, wherein transferring comprises transferring the data to a remote location.

11. (Currently Amended) A system for producing an assembly comprising at least one component, said system comprising:

at least one metrology device capable of mapping the ~~at least one component~~;

a workstation processing element capable of electronically displaying ~~at least one~~ three-dimensional actual model representative of the ~~at least one component~~ based upon the mapping of the ~~at least one component~~, wherein said workstation processing element is capable of comparing the ~~at least one actual~~ model to an electronic display of ~~at least one~~ three-dimensional authority model, wherein said workstation processing element is capable of altering a position of at least one of the ~~at least one actual~~ model and the ~~at least one authority~~ model based upon the comparison such that the ~~at least one authority~~ model and the ~~at least one actual~~ model at least partially align; and

a numerical control apparatus capable of performing a machine operation on the ~~at least one component~~ based upon the altered position of at least one of the ~~at least one actual~~ model and the ~~at least one authority~~ model,

wherein said workstation processing element is capable of dynamically displaying the ~~at least one actual~~ model as the workstation processing element alters the position of at least one of the ~~at least one actual~~ model and the ~~at least one authority~~ model and as the numerical control apparatus performs the machine operation such that the electronic display of the ~~at least one actual~~ model is automatically and repeatedly updated as the position is altered and the machine operation is performed.

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12. (Currently Amended) A system according to Claim 11 further comprising a computer-aided drafting and manufacturing element capable of designing the ~~at least one~~ authority model of the ~~at least one component~~ based upon at least one feature of the ~~at least one component~~.

13. (Currently Amended) A system according to Claim 12, wherein said computer-aided drafting and manufacturing element is capable of designing ~~at least one~~ an authority model based upon at least one authority feature of the ~~at least one component~~ and at least one tolerance, wherein said at least one metrology device is capable of mapping at least one actual feature of the ~~at least one component~~, and wherein said workstation processing element is capable of altering a position of at least one of the ~~at least one actual model~~ and the ~~at least one authority model~~ based upon the at least one authority feature and the at least one tolerance and the at least one actual feature.

14. (Currently Amended) A system according to Claim 11, wherein the ~~at least one~~ actual model comprises ~~at least one actual model data set~~, wherein the ~~at least one authority model~~ comprises at least one authority data set, and wherein said workstation processing element is capable of comparing by determining a best fit of the ~~at least one actual model~~ with the ~~at least one authority model~~ from the ~~at least one actual model data set~~ and the ~~at least one authority model data set~~.

15. (Currently Amended) A system according to Claim 11, wherein said at least one metrology device is capable of mapping the ~~at least one component~~ based upon a location and orientation of the ~~at least one component~~ relative to a flexible tool, wherein said workstation processing element is capable of comparing the ~~at least one authority model~~ and the ~~at least one actual model~~ based upon the location and orientation of the ~~at least one component~~.

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16. (Currently Amended) A system according to Claim ~~16~~15, wherein said workstation processing element is capable of comparing ~~at least one~~the authority model and ~~at least one~~the actual model further based upon a temperature of the ~~at least one~~ component and a temperature of a local environment of the ~~at least one~~ component.

17. (Currently Amended) A system according to Claim 11 further comprising at least one machine tool capable of fabricating the ~~at least one~~ component before said at least one metrology device maps the ~~at least one~~ component.

18. (Currently Amended) A system according to Claim 17, wherein said workstation processing element is further capable of automatically generating at least one numerical control program from the ~~at least one~~ authority model, and wherein said at least one machine tool is capable of fabricating the ~~at least one~~ component based upon the at least one numerical control program.

19. (Currently Amended) A system according to Claim 11, wherein said workstation processing element is further capable of automatically and repeatedly comparing in real time ~~at least one~~ actual model and the ~~at least one~~ authority model as the machine operation is performed.

20. (Currently Amended) A system according to Claim 11, wherein said workstation processing element is capable of repeatedly transferring data representative of the ~~at least one~~ actual model as the numerical control apparatus performs the machine operation.

21. (Currently Amended) A method of producing an assembly comprising at least one component, said method comprising:

mapping the ~~at least one~~ component and thereafter electronically displaying ~~at least one~~ a three-dimensional actual model representative of the ~~at least one~~ component based upon said mapping;

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comparing the ~~at least one as-built~~actual model to an electronic display of ~~at least one~~a three-dimensional authority model;

altering a position of at least one of the ~~at least one~~ actual model and the ~~at least one~~ authority model based upon said comparing such that the ~~at least one~~ authority model and the at least one as-built model at least partially align; and

performing a machine operation on the ~~at least one~~ component based upon the altered position of the ~~at least one~~ component,

wherein comparing comprises automatically and repeatedly comparing the actual model and the ~~at least one~~ authority model as the machine operation is performed.